RECEIVER R-327

AM
TEST PROCEDURE

STEP	ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	INPUT SELECTOR SWITCH	DIAL SETTING	TEST INSTRU-MENTS	ADJUST	REMARKS
1.	Connect external antenna terminal thru 220 pF dummy antenna	External antenna terminal. Keep signal level low.	455 kHz 60% mod. 400 Hz	AM MW	Approx. 600 kHz (No sta.)	Scope, VTVM @ Tape Output	I.F. coils T.104	Adjust for maximum signal output
2.	Same as above	Same as above	600 kHz	Same	600 kHz	Same	AM MW Osc. L.14	Adjust for calibration
3.	Same as above	Same as above	1400 kHz	Same	1400 kHz	Same	AM MW Osc. Trimmer AM1 (F.E. ass'y)	Adjust for calibration
4.	Same as above	Same as above	1400 kHz	Same	1400 kHz	Same	MW R.F. Trimmers AM2, (F.E. ass'y)	Adjust for maximum signal
5.	Same as above	Same as above	600 kHz	Same	600 kHz	Same	MW Antenna slider under bracket (See figure)	Adjust for maximum signal (soften wax, then reseal)
6.	Repeat steps 2, 3, 4, 5 for maximum.							
7.	Same as Step 1	300μV	1400 kHz 60% mod.	AM MW	1400 kHz	VTVM & Distortion Anal-	Detector T.105	Adjust for maximum undistorted output (1% or less). Output should fall between 600 and 800 mV.

RECEIVER-R327

FM
TEST PROCEDURE

STEP	ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	INPUT SELECTOR SWITCH	DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Dummy antenna Figure FM-1	External 300 ohm term. Use low signal level	10.7 MHz 100% mod.	FM	Off Station	VTVM @ Tape Output	Front End IF	Adjust for maximum signal strength meter indication
2.	Same as above	Same as above	90 MHz 1 kHz Modulation. Keep generator output low.	Same	90 MHz	Same	Front End L7	Adjust for dial calibration
3.	Same as above	Same as above	Same	Same	Same	Same	Front End L1 L3	Adjust for maximum audio output. Keep signal level low.
5.	Same as above	External 300 ohm term. Use low signal level	90 MHz	FM	90 MHz	VTVM @ Tape Output	T.102 T.103	Adjust for maximum output and minimum distortion
6.	Same as above	Same as above	106 MHz Keep Generator output low	Same	106 MHz	Same	TCO	Adjust for dial calibration
7.	Same as above	Same as above	106 MHz	Same	106 MHz	Same	TCR_1 and TCR_2	Adjust for maximum audio output, keep input level low for noisy signal
8.	Repeat steps 2, 3, 6 and 7 until no further improvement is noted. Check specification.							

RECEIVER R-327

MULTIPLEX
USE 19 kHz OUTPUT OF MX GENERATOR TO TRIGGER OSCILLOSCOPE HORIZONTAL

TEP	ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	INPUT SELECTOR SWITCH	DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Dummy antenna Figure FM-1	External 300 ohm term.	Use convenient freq.	FM	Tune to Gen.	VTVM @ Tape Output	VR.103 for stationary waveform	Generator output to zero. Scope Vertical to P114. Muting on (19 kHz Osc. adj.)
2.	Same as above	Same as above	Same	FM Stereo	Same	Same		Generator output 1.0mV Note waveform is synchronized
3.	Same as above	Same as above	Same	Same	Same	Same	VR102	Adjust for maximum separation

4. Note: Multiplex filter coils L9 L10 L11 and L12 are pre-aligned. Do not adjust unless circuit component is replaced. If necessary, adjust for null at specified frequency.

DEEMPHASIS: With output level reference at 400 Hz, switch modulation frequency to 10 kHz. Output level as follows: ±1 dB

75 µS	13.7 dB
50 µS	9.5 dB
25 µS	4.5 dB

RECEIVER R-327

AM
TEST PROCEDURE

STEP	ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	INPUT SELECTOR SWITCH	DIAL SETTING	TEST INSTRUMENTS	ADJUST	REMARKS
1.	Connect external antenna terminal thru 220 pF dummy antenna	External antenna terminal. Keep signal level low.	455 kHz 60% mod. 400 Hz	AM MW	Approx. 600 kHz (No sta.)	Scope, VTVM @ Tape Output	I.F. coils T.104	Adjust for maximum signal output
2.	Same as above	Same as above	600 kHz	Same	600 kHz	Same	AM MW Osc. L.14	Adjust for calibration
3.	Same as above	Same as above	1400 kHz	Same	1400 kHz	Same	AM MW Osc. Trimmer AM1 (F.E. ass'y)	Adjust for calibration
4.	Same as above	Same as above	1400 kHz	Same	1400 kHz	Same	MW R.F. Trimmers AM2, (F.E. ass'y)	Adjust for maximum signal
5.	Same as above	Same as above	600 kHz	Same	600 kHz	Same	MW Antenna slider under bracket (See figure)	Adjust for maximum signal (soften wax, then reseal)
6.	Repeat steps 2, 3, 4, 5 for maximum.							
7.	Same as Step 1	300μV	1400 kHz 60% mod.	AM MW	1400 kHz	VTVM & Distortion Anal	Detector T.105	Adjust for maximum undistorted output (1% or less). Output should fall between 600 and 800 mV

RECEIVER R-327

MULTIPLEX
USE 19 kHz OUTPUT OF MX GENERATOR TO TRIGGER OSCILLOSCOPE HORIZONTAL

STEP	ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	INPUT SELECTOR SWITCH	DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Dummy antenna Figure FM-1	External 300 ohm term.	Use convenient freq.	FM	Tune to Gen.	VTVM @ Tape Output	VR.103 for stationary waveform	Generator output to zero. Scope Vertical to P114. Muting on (19 kHz Osc. adj.)
2.	Same as above	Same as above	Same	FM Stereo	Same	Same		Generator output 1.0mV Note waveform is synchronized
3.	Same as above	Same as above	Same	Same	Same	Same	VR102	Adjust for maximum separation
4.	Note: Multiplex filter coils L9 L10 L11 and L12 are pre-aligned. Do not adjust unless circuit component is replaced. If necessary, adjust for null at specified frequency.							

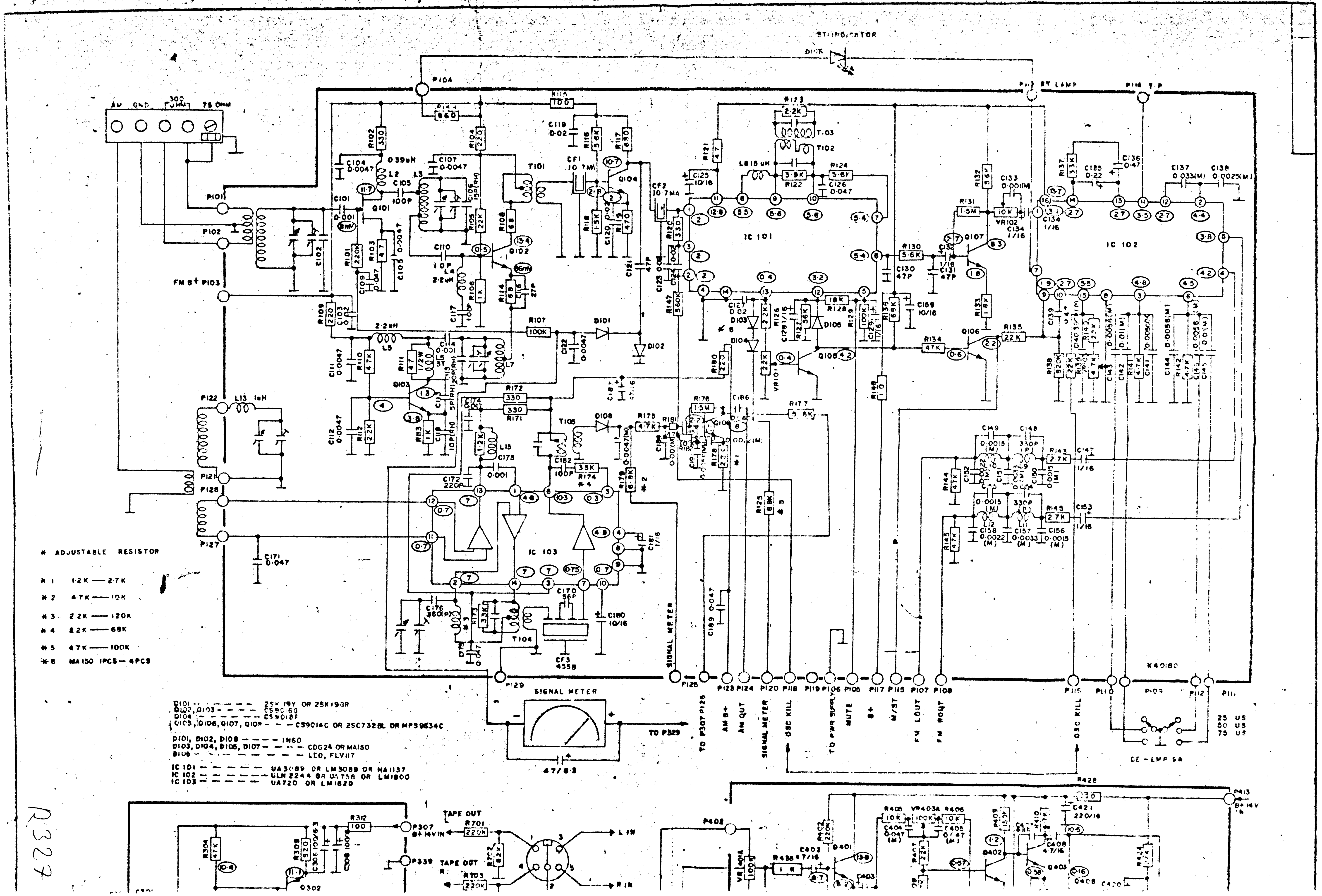
DEEMPHASIS: With output level reference at 400 Hz, switch modulation frequency to 10 kHz. Output level as follows: ±1 dB

75 µS	13.7 dB
50 µS	9.5 dB
25 µS	4.5 dB

RECEIVER-R327

FM
TEST PROCEDURE

STEP	ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	INPUT SELECTOR SWITCH	DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Dummy antenna Figure FM-1	External 300 ohm term. Use low signal level	10.7 MHz 100% mod.	FM	Off Station	VTVM @ Tape Output	Front End IF	Adjust for maximum signal strength meter indication
2.	Same as above	Same as above	90 MHz 1 kHz Modulation. Keep generator output low.	Same	90 MHz	Same	Front End L7	Adjust for dial calibration
3.	Same as above	Same as above	Same	Same	Same	Same	Front End L1 L3	Adjust for maximum audio output. Keep signal level low.
5.	Same as above	External 300 ohm term. Use low signal level	90 MHz	FM	90 MHz	VTVM @ Tape Output	T.102 T.103	Adjust for maximum output and minimum distortion
6.	Same as above	Same as above	106 MHz Keep Generator output low	Same	106 MHz	Same	TCO	Adjust for dial calibration
7.	Same as above	Same as above	106 MHz	Same	106 MHz	Same	TCR_1 and TCR_2	Adjust for maximum audio output, keep input level low for noisy signal
8.	Repeat steps 2, 3, 6 and 7 until no further improvement is noted. Check specification.							

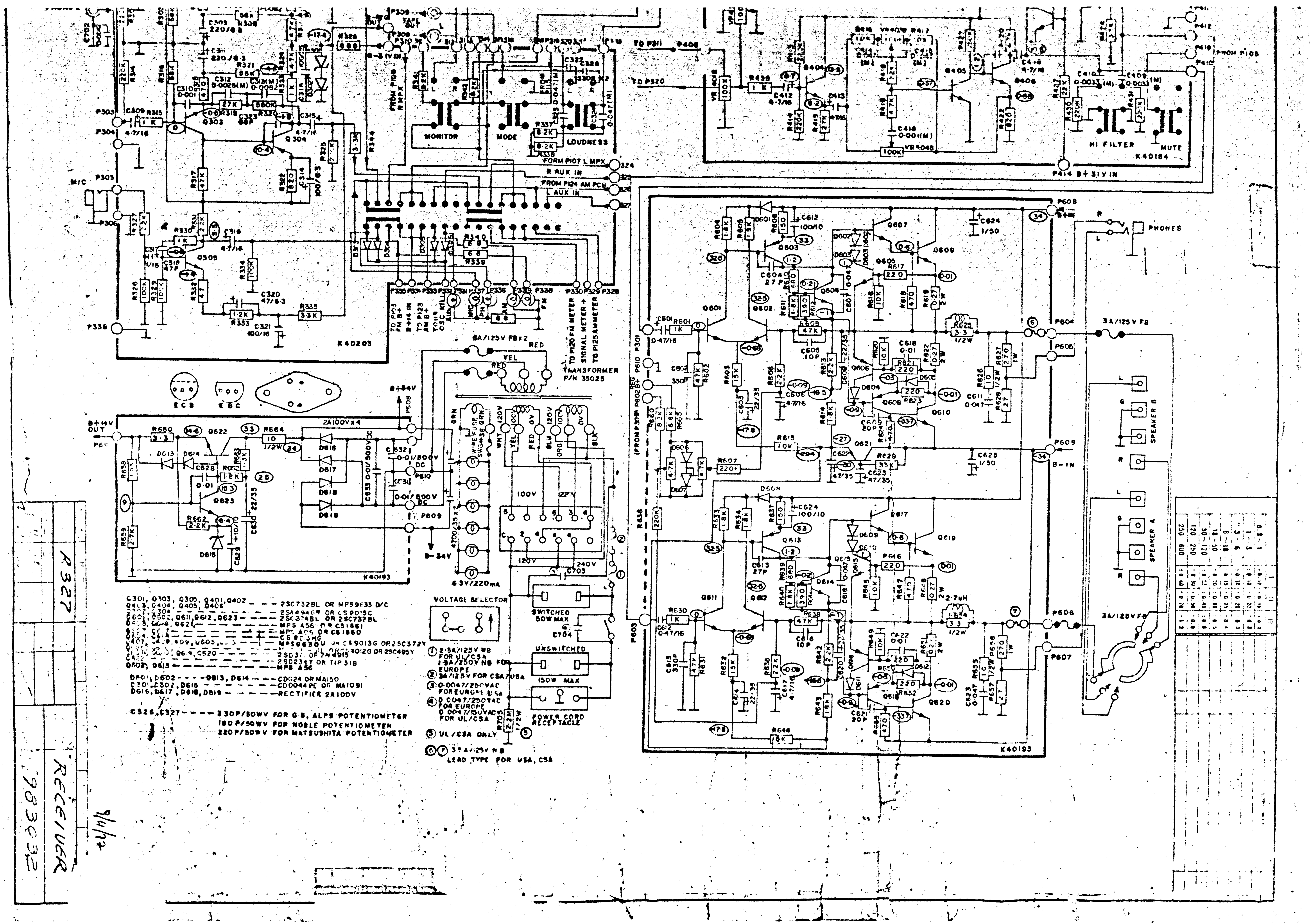

ST INDICATOR
D106
P104
P113 ST LAMP
P114 T.P
AM
GND
300 OHM
75 OHM
P101
P102
FM B+ P103
P122
L13 1uH
P124
P128
P127
C171 0.047
IC 101
IC 102
IC 103
T101
T102
T103
T104
T105
CF1 10.7MA
CF2 10.7MA
CF3 4558
Q101
Q102
Q104
Q105
Q106
Q107
Q108
VR101
VR102
P129
SIGNAL METER
P125
P123
P124
P120
P118
P119
P106
P105
P117
P115
P107
P108
P116
P110
P109
P112
P111
TO P307 P126
AM B+
AM OUT
SIGNAL METER
OSC KILL
TO PWR SUPPLY
MUTE
B+
M/ST
FM L OUT
FM R OUT
OSC KILL
K40180
25 US
50 US
75 US
DE-EMP SA
47/6.3
TO P329
R428
P413
B+ 14V IN
P402
P307
B+ 14V IN
P339
TAPE OUT L
TAPE OUT R
R701 220K
R703 220K
L IN
R IN
Q302
Q401
Q402
Q403
Q408

✱ ADJUSTABLE RESISTOR

✱ 1	1.2K —— 2.7K
✱ 2	4.7K —— 10K
✱ 3	2.2K —— 120K
✱ 4	2.2K —— 68K
✱ 5	4.7K —— 100K
✱ 6	MA150 1PCS — 4PCS

Q101	2SK19Y OR 2SK19GR
Q102, Q103	CS9016G
Q104	CS9018F
Q105, Q106, Q107, Q108	CS9014C OR 2SC732BL OR MPS9634C
D101, D102, D108	1N60
D103, D104, D105, D107	CDG24 OR MA150
D106	LED, FLV117
IC 101	UA3089 OR LM3089 OR HA1137
IC 102	ULN 2244 OR UA758 OR LM1800
IC 103	UA720 OR LM1820

R327


K40203
K40184
K40193
MONITOR
MODE
LOUDNESS
HI FILTER
MUTE
MIC
PHONES
SPEAKER A
SPEAKER B
FORM P107 L MPX
R AUX IN
FROM P124 AM PCB
L AUX IN
FROM P105
P414 B+ 31V IN
TO P311
TO P320
B+IN
B-IN
TO P123 FM B+
B+14 IN
TO P123 AM B+
TO P120 FM METER +
SIGNAL METER +
TO P125 AMMETER
TRANSFORMER P/N 35025
6A/125V FB x 2
3A/125V FB
3A/125V FB
2A100V x 4
B+14V OUT
B+34V
B-34V
6.3V/220mA
WIRE FUSE SAG438
100V
120V
220V
240V
SWITCHED 50W MAX
UNSWITCHED 150W MAX
POWER CORD RECEPTACLE
VOLTAGE SELECTOR
ECB
EBC

C301, C303, C305, Q401, Q402
Q403, Q404, Q405, Q406 — — — 2SC732BL OR MPS9633 D/C
[illegible], Q304 — — — 2SA494GR OR CS9015C
Q601, Q602, Q611, Q612, Q623 — — — 2SC374BL OR 2SC732BL
[illegible], Q621 — — — MPS A56 OR CS1861
[illegible] — — — MPS A06 OR CS1860
[illegible] — — — CS 9C 3HG
Q407, [illegible], 409, Q605, [illegible] — — — MPS9630U OR CS9013G OR 2SC372Y
[illegible] — — — [illegible] OR CS9012G OR 2SC495Y
[illegible], Q619, Q620 — — — 2SD3[illegible] OR 2N4915
Q622 — — — 2SD234Y OR TIP31B
Q607, Q613 — — — MPS A56

D601, D602 — — — D613, D614 — — — CDG24 OR MA150
D301, D302, D615 — — — CD0044PC OR MA1091
D616, D617, D618, D619 — — — RECTIFIER 2A100V

C326, C327 — — — 330P/50WV FOR G.S, ALPS POTENTIOMETER
180P/50WV FOR NOBLE POTENTIOMETER
220P/50WV FOR MATSUSHITA POTENTIOMETER

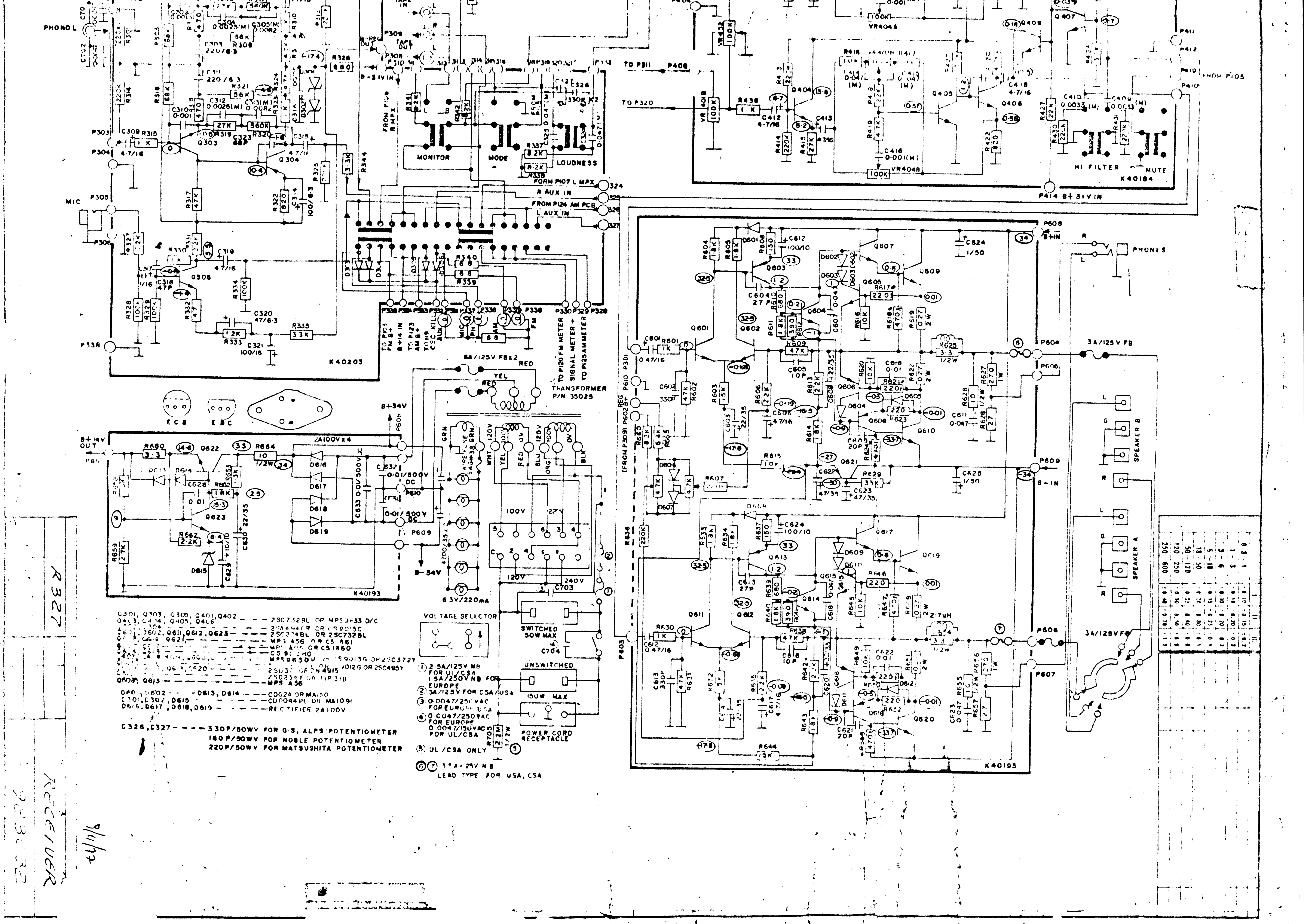
① 2.5A/125V NB FOR UL/CSA
1.5A/250V NB FOR EUROPE
② 3A/125V FOR CSA/USA
③ 0.0047/250VAC FOR EUROPE USA
④ 0.0047/250VAC FOR EUROPE
0.0047/150VAC FOR UL/CSA
⑤ UL/CSA ONLY
⑥ ⑦ 3.5A/125V NB
LEAD TYPE FOR USA, CSA

R327

RECEIVER

7833C32

9/4/77


K40203
K40184
K40193
HI FILTER
MUTE
MONITOR
MODE
LOUDNESS
PHONO L
MIC
TAPE OUT
FROM P106 R MPX
FORM P107 L MPX
R AUX IN
FROM P124 AM PCB
L AUX IN
TO P320
TO P311
P414 B+31V IN
TO P123 AM B+
TO P13 FM B+
B+14 IN
TO 119 CSC KILL
TO P120 FM METER
SIGNAL METER +
TO P125 AMMETER
6A/125V FBx2
TRANSFORMER P/N 35025
(FROM P309) P602 B+ REG
P610 P301
B+34V
B-34V
B+14V OUT
2A100Vx4
6.3V/220mA
VOLTAGE SELECTOR
SWITCHED 50W MAX
UNSWITCHED
150W MAX
POWER CORD RECEPTACLE
3A/125V FB
B+IN
B-IN
PHONES
SPEAKER A
SPEAKER B
E C B
E B C
Q301, Q303, Q305, Q401, Q402 Q403, Q404, Q405, Q406 — — — 2SC732BL OR MPS9633 D/C
2SA494GR OR CS9015C
Q601, Q602, Q611, Q612, Q623 — — — 2SC374BL OR 2SC732BL
Q621, — — — MPS A56 OR CS961
MPS A06 OR CS1860
CS9013HG
MPS8630U OR CS9013G OR 2SC372Y
Q620 — — — 2SD31 OR 2N4915
2SD234Y OR TIP31B
Q608, Q613 — — — MPS A56
D601, D602 — — — D613, D614 — — — CDG24 OR MA150
D301, D302, D615 — — — CD0044PE OR MA1091
D616, D617, D618, D619 — — — RECTIFIER 2A100V
C326, C327 — — — 330P/50WV FOR G.S, ALPS POTENTIOMETER
180P/50WV FOR NOBLE POTENTIOMETER
220P/50WV FOR MATSUSHITA POTENTIOMETER
① 2.5A/125V NB FOR UL/CSA 1.5A/250V NB FOR EUROPE
② 3A/125V FOR CSA/USA
③ 0.0047/250VAC FOR EUROPE USA
④ 0.0047/250VAC FOR EUROPE 0.0047/150VAC FOR UL/CSA
⑤ UL/CSA ONLY
⑥⑦ 3A/125V NB LEAD TYPE FOR USA, CSA

R327

RECEIVER

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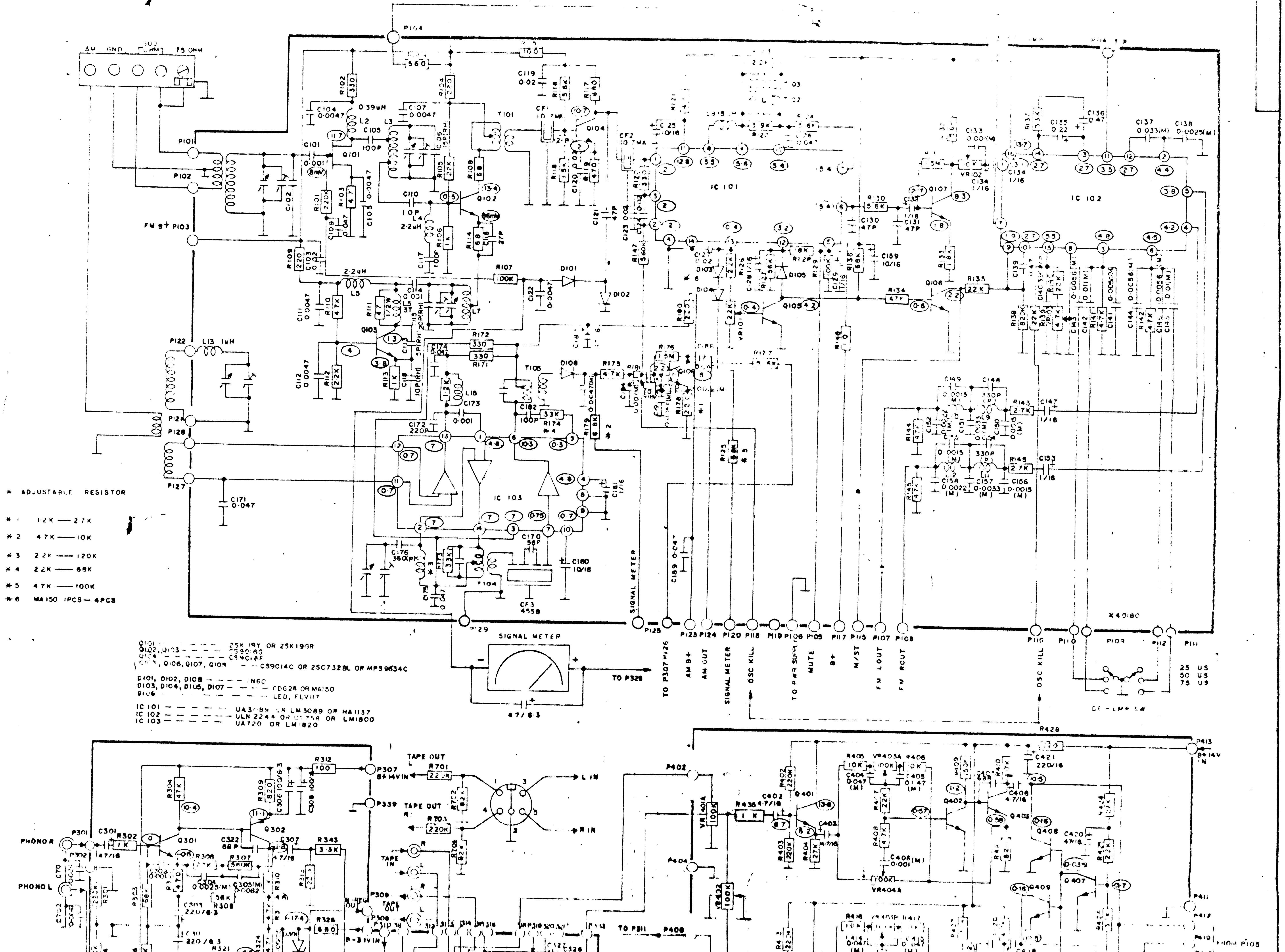
AM GND 75 OHM
P101
P102
FM B+ P103
P104
P114 T P
IC 101
IC 102
IC 103
Q101
Q102
Q103
Q104
Q105
Q106
Q107
D101
D102
D108
T101
T104
T105
CF1 10.7MA
CF2 10.7MA
CF3 455B
L2 0.39uH
L4 2.2uH
L5 2.2uH
L13 1uH
P122
P127
P128
P129
SIGNAL METER
TO P329
47/6.3
P125
P123 P124 P120 P118 P119 P106 P105 P117 P115 P107 P108
TO P307 P126
AM B+
AM OUT
SIGNAL METER
OSC KILL
TO PWR SUPPLY
MUTE
B+
M/ST
FM LOUT
FM ROUT
P116
OSC KILL
P110
P109
P112
P111
K40180
25 US
50 US
75 US
DE-EMP SW
R428
P413
B+14V IN
PHONO R
PHONO L
P301
P302
Q301
Q302
P307
B+14V IN
P339
TAPE OUT L
TAPE OUT R
R701
R703
L IN
R IN
TAPE IN
P308
P309
REC OUT
P402
P404
P408
TO P311
VR401A
VR402
Q401
Q402
Q403
Q407
Q408
Q409
VR403A
VR404A
P411
P412
P419
PHONO P105

* ADJUSTABLE RESISTOR

*1 1.2K —— 2.7K
*2 4.7K —— 10K
*3 2.2K —— 120K
*4 2.2K —— 68K
*5 4.7K —— 100K
*6 MA150 1PCS — 4PCS

Q101 — — — — 2SK19Y OR 2SK19GR
Q102, Q103 — — — — CS9016G
Q104 — — — — — — CS9018F
Q105, Q106, Q107, Q108 — — CS9014C OR 2SC732BL OR MPS9634C

D101, D102, D108 — — — — 1N60
D103, D104, D105, D107 — — — — CDG2A OR MA150
D106 — — — — — LED, FLV117

IC 101 — — — — — UA3089 OR LM3089 OR HA1137
IC 102 — — — — — — ULN 2244 OR UA758 OR LM1800
IC 103 — — — — — UA720 OR LM1820